

What is claimed is:

1. A Personal Computer Memory Card International Association (PCMCIA) card for remotely communicating and interfacing with flight performance data on an aircraft, the PCMCIA card capable of being plugged into an Aircraft Condition Monitoring System (ACMS) using a card interface, the ACMS generating an ACMS report after one or more exclusive conditions are fulfilled, the PCMCIA card comprising:
 - a central processing unit (CPU) providing processing power and wireless transmission functionality, wherein the PCMCIA card uses the CPU to detect whether the ACMS report is generated;
 - a wireless interface controlled by the CPU, the wireless interface connecting the CPU to a wireless network; and
 - a memory coupled to the CPU through a communication bus, the memory storing flight performance data,wherein the CPU wirelessly transmits the flight performance data stored in the memory to a ground station through the wireless network after the one or more exclusive conditions are fulfilled and the ACMS report is generated.
2. The PCMCIA card of claim 1, wherein the CPU determines whether there is a connection available between the PCMCIA card and the ground station.
3. The PCMCIA card of claim 1, wherein the memory includes a database for storing wireless network attributes for different airports.
4. The PCMCIA card of claim 3, wherein the wireless network attributes include one or more of network identification, basic transmission control protocol (TCP) information, power regulation, encryption data, and authentication data.
5. The PCMCIA card of claim 1, wherein the wireless interface is controlled by software embedded in the ACMS.
6. The PCMCIA card of claim 1, further comprising a PCMCIA bus coupled to the CPU, the PCMCIA bus connecting the CPU to the ACMS.
7. The PCMCIA card of claim 1, wherein the flight performance data are erased from the memory after the transmission.
8. The PCMCIA card of claim 1, wherein the CPU employs security measures to secure an access to the flight performance data.
9. The PCMCIA card of claim 8, wherein the security measures include encrypting the flight performance data during transmission.

10. The PCMCIA card of claim 8, wherein the security measures include employing wired equivalent privacy (WEP) during transmission.
11. The PCMCIA card of claim 8, wherein the security measures include employing wireless-fidelity protected access (WPA) during transmission.
- 5 12. The PCMCIA card of claim 8, wherein the security measures include employing advanced encryption standard (AES) during transmission.
13. The PCMCIA card of claim 8, wherein the security measures include employing extensible authentication protocol (EAP) during transmission.
14. The PCMCIA card of claim 1, wherein the wireless network is a wireless-fidelity
10 (Wi-Fi) 802.11b network.
15. The PCMCIA card of claim 1, wherein the ACMS report is generated when cargo doors of the aircraft are open.
16. The PCMCIA card of claim 1, wherein the ACMS report is generated when a ground speed of the aircraft reaches zero.
- 15 17. The PCMCIA card of claim 1, wherein the ACMS report is generated when an engine fuel flow reaches zero.
18. The PCMCIA card of claim 1, wherein the ACMS report is generated when fuel valves of the aircraft are closed.
19. The PCMCIA card of claim 1, wherein the PCMCIA card enables remotely access to
20 the ACMS and ACMS peripherals from the ground station.
20. A Personal Computer Memory Card International Association (PCMCIA) card for remotely communicating and interfacing with flight performance data on an aircraft, the PCMCIA card capable of being plugged into an Aircraft Condition Monitoring System (ACMS) using a card interface, the ACMS generating an ACMS report after one or more
25 exclusive conditions are fulfilled, the PCMCIA card comprising:
 - a central processing unit (CPU) providing processing power and wired transmission functionality, wherein the PCMCIA card uses the CPU to detect whether the ACMS report is generated;
 - an Ethernet interface coupled to the CPU, the Ethernet interface connecting the CPU
30 to a wired network on the aircraft; and
 - a memory coupled to the CPU through a communication bus, the memory storing flight performance data,
 - wherein the CPU transmits the flight performance data stored in the memory to the wired network after the one or more exclusive conditions are fulfilled and the ACMS report

is generated, and wherein the wired network transmits the flight performance data to a ground station.

21. The PCMCIA card of claim 20, wherein the CPU determines whether there is a connection available between the PCMCIA card and the ground station.

5 22. The PCMCIA card of claim 20, wherein the wired network transmits the flight performance data to the ground station through an access point located on the aircraft and an wireless network.

23. The PCMCIA card of claim 22, wherein the wireless network is a wireless-fidelity (Wi-Fi) 802.11b network.

10 24. The PCMCIA card of claim 20, wherein the memory includes a database for storing wireless network attributes for different airports.

25. The PCMCIA card of claim 24, wherein the wireless network attributes include one or more of network identification, basic transmission control protocol (TCP) information, power regulation, encryption data, and authentication data.

15 26. The PCMCIA card of claim 20, wherein the Ethernet interface is controlled by software embedded in the ACMS.

27. The PCMCIA card of claim 20, further comprising a PCMCIA bus coupled to the CPU, the PCMCIA bus connecting the CPU to the ACMS.

28. The PCMCIA card of claim 20, wherein the wired network is an Ethernet.

20 29. The PCMCIA card of claim 20, wherein the flight performance data are erased from the memory after the transmission.

30. The PCMCIA card of claim 20, wherein the CPU employs security measures to secure an access to the flight performance data.

25 31. The PCMCIA card of claim 30, wherein the security measures include encrypting the flight performance data during transmission.

32. The PCMCIA card of claim 30, wherein the security measures include employing wired equivalent privacy (WEP) during transmission.

33. The PCMCIA card of claim 30, wherein the security measures include employing wireless-fidelity protected access (WPA) during transmission.

30 34. The PCMCIA card of claim 30, wherein the security measures include employing advanced encryption standard (AES) during transmission.

35. The PCMCIA card of claim 30, wherein the security measures include employing extensible authentication protocol (EAP) during transmission.

36. The PCMCIA card of claim 20, wherein the one or more exclusive conditions include one of a group comprising cargo doors of the aircraft being open, a weight on wheels of the aircraft equaling one, a ground speed of the aircraft reaching zero, an engine fuel flow reaching zero, and fuel valves of the aircraft being closed.